

ARGUMENTS

Claims 1-15 stand rejected, primarily in view of Chen (U.S. Patent No. 6,335,990) and also in view of Slavin (U.S. Patent No. 6,088,388). Applicant respectfully disagrees with the Examiner's rejection of these claims as will be explained.

Certain embodiment of the invention provide a novel method of video signal processing which provides advantageous filtering results. For example, Claim 1 requires three linear filtering operations to be performed on a video signal input to produce three filtered signals. The three filtered signals so obtained are then multiplied together. As opposed to, for example, being multiplied by a constant.

Turning now to Chen, there is disclosed a spatio-temporal filter which uses a number of linear filters in combination. The filter in Chen is implemented using both adders and multipliers. However, the multipliers only ever operate to multiply a filtered signal by a constant.

It can be seen then that Chen does not multiply signals together, as claimed in Claim 1. This difference is fundamental and is highlighted in the table on page 3 of the present application where the two different types of operation are clearly distinguished. It is also noted that the two different types of operation require different implementations, each having different associated costs.

Considering now the Examiner's detailed objections, in rejecting Claim 1 the Examiner considers that the claimed step of multiplying together three filtered signals is met by the summing of three filtered values to provide output 708 in Figure 8 of Chen. As explained at column 7, line 56 to column 8, line 3 of Chen, each multiplier 1006, 1008, and 1010 only multiplies a pixel value with a weighting value (or a constant). The results of each multiplication are then added at or in adder 1012. In an attempt to assist the Examiner, and as a simplified example only, if "a," "b," and "c" represent three filtered signals produced by conducting three

filtering operations on an input video signal, and k_1 , k_2 , and k_3 represent three constants, Chen performs the following operation:

$$a*k_1 + b*k_2 + c*k_3$$

whereas the multiplication of three filtered signals results in the different operation:

$$a*b*c$$

The effect of multiplying signals together is fundamentally different from the effect of adding together signals, each of which has been multiplied by a coefficient (so called weighted addition). Chen does not disclose or suggest the claimed step of multiplying together three filtered signals. Therefore, it is respectfully submitted that Claim 1 is novel and non-obvious over the cited art.

Claims 2 to 7 and 15 are dependent on Claim 1 are considered novel and non-obvious at least by virtue of dependency upon Claim 1.

The Examiner has rejected Claims 5 and 8 to 14 as being obvious over Chen in combination with Slavin.

It has already been seen above that Chen does not teach either a method or apparatus for multiplying together three filtered signals. Considering now Slavin, there is disclosed a non-linear digital FIR filter which uses a plurality of FIR filters in series, each filter representing each product term of a polynomial of order F.

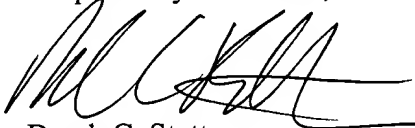
It can be seen in Slavin that the signal passes in a series fashion between the individual filter elements. That is, a single signal is filtered and the single filtered signal is passed directly to the next filter for further filtering. Nowhere is there the possibility of a first filtered signal being multiplied by a second filtered signal, let alone the possibility for the result to be multiplied by a third signal.

The claimed features of Claim 8, of a first multiplier for multiplying together outputs of first and second filters, and a second multiplier for multiplying together the output of the first multiplier and a third filter, are not taught or suggested in either Chen or Slavin, either alone or in combination.

It is, therefore, respectfully submitted that Claim 8 is novel and non-obvious over the cited art. Claims 9 to 14 are considered novel and non-obvious at least by virtue of their dependency upon Claim 8.

Entry of this Amendment, allowance of claims 1 – 15, and issuance of a Notice of Allowance are respectfully requested. The undersigned is available for telephone consultation at anytime during normal business hours.

Respectfully submitted,



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Docket No.: 087805-9016-00
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